

REMARKS/ARGUMENTS

This Amendment is submitted in response to the Office Action mailed May 2, 2007. The deadline for responding has been extended to November 2, 2007 by a request for an extension of time made herewith.

This amendment follows an October 11, 2007 interview summarized below. Applicant's representative thanks the Examiner for the courtesy of the interview and the opportunity to discuss the rejected claims during the interview.

I. Introduction

New claims 31-50 have been added to add claims in various formats. In addition, various claims have been amended to clarify the claims. None of the claims have been amended in response to the applied references.

In view of the above amendments, claims 1-50 are pending in the application. Claims 17-30 are allowed.

Claims 2, 5-10, 12 and 14-16 were objected to for depending from a rejected base claim. Claims 2, 5, 12, and 14 have been rewritten in independent form. Accordingly, these claims and claims 6-8 and 15-16 which depend from one of these newly independent claims are in condition for allowance.

Claims 1, 3, 4, 11, and 13 stand rejected in view of the references applied in the office action. As discussed during the interview, for the reasons summarized below in the interview summary, none of these claims are anticipated or rendered obvious by the applied references.

The new claims are supported by the original application as filed and are allowable for the same or similar reasons that one or more of the previously pending claims are allowable. Accordingly, as will be discussed below, all of the claims are allowable.

II. The New Claims Are Allowable

1. New claims 31 and 34

New claims 31 and 34 are allowable for the same or similar reasons that claim 1 is allowable.

2. New claims 32-33 and 35-36

New claims 32-33 and 35-36 are allowable for the same or similar reasons that claim 2 was indicated to be directed to allowable subject matter. Accordingly, these claims like claim 2 are in condition for allowance.

3. New claims 37

New claim 37 is allowable for the same or similar reasons that claim 11 is allowable.

4. New claims 38-39

New claims 38-39 are allowable for the same reason that claim 12 was indicated to be directed to allowable subject matter. Accordingly claims 38-39 like claim 12 are in condition for allowance.

5. New claims 40-50

New claims 40-50 are allowable for the same or similar reasons that claim 23 was allowed.

**III. Interview Summary Including
Discussion Why The Rejection of
Claims 1, 3, 4, 11 and 13 Should Be Withdrawn.**

This interview summary is intended as a statement of the substance of the October 11, 2007 in person interview. Participants in the interview included Applicant's undersigned representative, Michael P. Straub, inventor Junyi Li and Examiner Julio R. Perez. No exhibits were shown and no amendments were proposed. During the interview claim 1 and the references U.S. 20040086027A1 (the Shattil reference) and US 006259658B1 (the Rinne et al. reference) were discussed.

As discussed during the interview, claim 1 is patentable because it recites:

A communications method for use in a communications system including a base station and a plurality of wireless terminals, a different communications channel existing between each wireless terminal in said plurality of wireless terminals and said base station, the communications channel existing between each particular wireless terminal and the base station having a quality which is the channel quality for the particular wireless terminal, the method comprising:

operating the base station to:
i) maintain a set of channel condition information indicating the channel quality of each of said plurality of wireless terminals;
ii) examine the set of channel condition information to identify wireless terminals having channel conditions which differ from one another by at least a pre-selected minimum amount; and

iii) assign a communications channel segment to be used to communicate superimposed signals corresponding to at least two different wireless terminals identified as having channel conditions which differ by at least said pre-selected minimum amount.

As discussed during the interview, various exemplary embodiments of the invention which use superposition to communicate information to different wireless terminals using the same shared resource. At least some of the embodiments rely on the different wireless terminals having different channel conditions to facilitate recovery of the superimposed signals. In order to make sure that devices with sufficiently different channel conditions are paired together for superposition purposes, a set of channel condition information indicating the channel quality associated with different wireless terminals is maintained in some embodiments and then this information is used to support the selection and pairing of wireless terminals for sharing of a channel segment for superposition purposes. In various embodiments, when assigning a communications segment, to facilitate recovery of superimposed signals the wireless terminals to share a communications channel segment are selected in such a manner that the wireless terminals which are paired will have channel conditions which differ by at least a pre-selected minimum amount, e.g., an amount of channel condition difference that facilitates recovery of superimposed signals.

As discussed during the interview while the Shattil reference discusses multiple terminals sharing the same communications resource there is nothing to suggest that it is desirable or beneficial to select wireless terminals which have different channel conditions, e.g., channel

conditions which differ by at least a pre-selected minimum amount to share a communications segment.

The Examiner acknowledges the deficiency of Shattil in the office action stating:

[Shattil] ... is silent on examining information of wireless terminals having channel conditions which differ from one another by at least a pre-selected minimum amount.

Rinne teaches channel allocation to allocate to a desired connection wherein the use of frequency spectrum is used based on separate amount of power between connections (col 10, lines 9-38).

It would have been obvious to one skilled in the art at the time the invention to modify Rinne, such that generating conditions indicating differences, to provide means to find low and high power terminals for assigning them to same time slot so that to minimize interference. (Office Action).

Applicants noted that the Rinne reference does not discuss superposition coding but rather the use of time slots of different power levels with mobile stations being assigned to time slots based on their power needs.

There is nothing to suggest selecting wireless terminals having different channel conditions, e.g., channel conditions which differ by at least a pre-selected minimum amount to share a segment. Accordingly, even if combined with the Shattil reference it would not result in the claimed invention since the Shattil reference also fails to disclose or suggest this feature. Applicants argued that for the foregoing reasons the rejections of all the claims based on the applied references should be withdrawn.

In view of Applicant's remarks the Examiner agreed to reconsider the rejection upon submission of the response to the outstanding office action.

IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are in condition for allowance. Accordingly, it is requested that the Examiner pass this application to issue.

If there are any outstanding issues which need to be resolved to place the application in condition for allowance the Examiner is requested to call (732-542-9070) and schedule an interview with Applicant's undersigned representative. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

None of the statements or discussion made herein are intended to be an admission that any of the applied references are prior art to the present application and Applicants preserve the right to establish that one or more of the applied references are not prior art.

Respectfully submitted,



November 2, 2007

Michael P. Straub Attorney
Reg. No. 36,941
Tel.: (732) 542-9070

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper (and any accompanying paper(s)) is being facsimile transmitted to the United States Patent Office on the date shown below.

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Michael P. Straub

Signature

November 2, 2007

Date